#16/Response
12/9/02

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANT:	Blossfeld et al.	**GROUP:**	2862
SERIAL NO:	09/743,926	**EXAMINER:**	W. E. Snow
FILED:	March 19, 2001		
FOR:	INTEGRATED CIRCUIT WITH A SENSOR ELEMENT FOR PROVIDING AN ENCODED OUTPUT SIGNAL [as amended]		

RESPONSE

This document is in response to the Official Action dated July 16, 2002.

Claims 8-24 remain for further consideration.

The rejections shall be taken up in the order presented in the Official Action.

1-2. Claims 8-24 currently stand rejected under 35 U.S.C. §112, first paragraph. It is alleged in the Official Action that the claims *"...contain subject matter that is not described in the specification in such a way as to reasonable convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. It is unclear as to what circuitry is contained in output stage 5 so as to provide [a] coded output as recited in claims 8, 16 and 20."* The Official Action also alleges there is no support in the specification for the structure recited in claims 9, 13, 14, 17 and 21.

Claims 8, 16 and 20 each recite an integrated circuit sensor that provides an encoded output signal. The specification as filed recites:

> "The sensor circuit preferably has an output stage with a single output. At this output, the plurality of discrete circuit states is represented, for example, by the pulse/pause ratio of the output signal or by a digital signal, which is not necessarily binary coded, or by an analog signal, which has a number of signal steps, corresponding to the plurality of switching states. For example, if five switching states are to be represented, the pulse/pause ratio can vary between 5/1, 4/2, 3/3, 2/4, and 1/5. Besides these examples, one can also conceive of other ways of representing the plurality of switching states with a single output. The design of the sensor circuit with a single output constitutes a sensor circuit which is especially cost-optimized, since a plurality of parallel outputs need no longer be made available." (emphasis added, English language translation of application as filed, pg. 5).

As set forth above, the encoding technique to provide the encoded output signal can include adjusting the pulse/pause ratio of an output signal (i.e., pulse-width modulation). The specification as filed also recites:

> "Figure 3 shows a similar arrangement as Figure 1. However, the circuit now has a single output terminal 7a, from which the various switching states of the electrical signal can be picked off in coded form. This single output terminal 7a can also be used as the input terminal for adjusting the thresholds." (English language translation of application as filed, pg. 12, lines 8-11).

Claims 9, 17 and 21 each recite that the output stage generates the encoded output signal using pulse width modulation. The structure supporting claims 9, 17 and 21 is disclosed in the text set forth above from the English language translation of the application as filed, (e.g., see the English language the text in the application as filed, pg. 5).

Hence, it is respectfully submitted that the specification as filed properly discloses

structure as recited in claims 8, 9, 16, 17, 20 and 21.

The structure recited in claims 13 and 14 is supported by the text:

> "According to a preferred design, the thresholds are made adjustable. The circuit can thus be adapted to the particular external circumstances for forming the output signal, as a function of the electrical input signal, without creating a new, corresponding sensor circuit. It is thus possible to adapt the circuit arrangement to possible time changes, such as aging effects, especially in the transducer associated with the circuit arrangement. Production tolerances or changes due to various use conditions, for example due to temperature effects and the like, can thus be taken into account very simply and economically. This considerably expands the field of application of the sensor circuit, by further increasing its functionality, without requiring complex or expensive external circuits to adapt the output signal or the input signal. This results in a very simple and reliable sensor circuit, which is especially characterized by a very economical and flexible design.
>
> An especially preferred design of the sensor circuit makes it possible for the user to set the thresholds himself. This can be done in a special learning mode of the sensor circuit, in which the desired switching ranges of the sensor circuit are approached, and the analytical unit, in collaboration with the control unit, determines the necessary parameters of the threshold values, and stores them in an appropriate memory, which in particular is designed as a non-volatile memory. This results in an especially flexible and very universally applicable sensor circuit, which allows the user a very large and manifold field of application." (English language translation of the application as filed, pg. 6, line 11 - pg. 7, line 11).

Hence, it is respectfully submitted that the specification properly discloses structure as recited in claims 13 and 14.

For all the foregoing reasons, reconsideration and allowance of claims 8-24 is respectfully requested.

If a telephone interview could assist in the prosecution of this application, please call the undersigned attorney.

Respectfully submitted,

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